OPTICAL BIO-DISCS INCLUDING SPIRAL FLUIDIC CIRCUITS FOR PERFORMING ASSAYS

Abstract of the Disclosure

The present invention relates to methods and apparatus for assays including optical bio-discs with spiral fluidic circuits and related detection systems. The optical bio-disc 110 includes a cap portion 116 having inlet and vent ports formed therein, a first channel layer 632 having cut-out portions, a second channel layer 634 having cut-out portions; a third channel layer 636 having cut-cut portions, a fourth channel layer 638 having cut-out portions, and a substantially circular substrate having a center and an outer edge. The cut-out portions are in register with each other such that when the bio-disc 110 is assembled a spiral fluidic circuit is formed having an inlet port, a mixing chamber 134, upper flow chambers 620, lower pass through chambers 622, inlet passages 626, outlet passages 628, a circumferential analysis chamber 618, and vent ports in fluid communication.

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